

[0036] I claim:

1. A layered composite waterproofing membrane comprising a layer of rubberized asphalt having first and second sides with a flexible layer of durable plastic film continuously bonded to the first side and a layer of geotextile continuously bonded to the second side.
2. The membrane of claim 1 wherein the rubberized asphalt is rubber-modified bitumen.
3. The membrane of claim 1 wherein the rubberized asphalt comprises from about 5 to about 20 weight percent rubber.
4. The membrane of claim 1 wherein the rubberized asphalt comprises from about 10 to about 15 weight percent rubber.
5. The membrane of claim 1 wherein the rubberized asphalt is modified with a block copolymer.
6. The membrane of claim 5 wherein the block copolymer is a styrene-butadiene-styrene block copolymer.
7. The membrane of claim 5 wherein the block copolymer is a styrene-isoprene-styrene block copolymer.
8. The membrane of claim 1 wherein the plastic film layer has a thickness ranging from about 1 mil up to a thickness where the layer ceases to be flexible.
9. The membrane of claim 8 wherein the plastic film layer is cross-laminated to resist punctures.

10. The membrane of claim 8 wherein the plastic film layer has a thickness ranging from about 10 to about 25 mils.

11. The membrane of claim 10 wherein the plastic film layer has a thickness of about 20 mils.

12. The membrane of claim 1 wherein the plastic film layer comprises polyethylene.

13. The membrane of claim 1 wherein the plastic film layer comprises polypropylene.

14. The membrane of claim 12 wherein the polyethylene is high density polyethylene.

15. The membrane of claim 1 wherein the geotextile is nonwoven.

16. The membrane of claim 1 wherein the geotextile is made of fibers comprising olefinic polymers.

17. The membrane of claim 16 wherein the geotextile is made of fibers comprising poly-alpha olefins and polyesters.

18. The membrane of claim 17 wherein the geotextile is made of fibers comprising polypropylene.

19. The membrane of claim 18 wherein the geotextile is made of nonwoven fibers comprising polypropylene.

20. The membrane of claim 1 in combination with a drainage mat attached to the high density polyethylene layer.

21. The membrane of claim 20 wherein the drainage mat is bonded to the high density polyethylene layer.

22. The membrane of claim 21 wherein the drainage mat and high density polyethylene layer are bonded with an adhesive.

23. The membrane of claim 1, having an overall thickness ranging from about 30 to about 150 mils.

24. The membrane of claim 23, having an overall thickness ranging from about 65 to about 95 mils.

25. A layered composite waterproofing membrane having an overall thickness and comprising a layer of rubberized asphalt having first and second sides with a flexible layer of durable plastic film continuously bonded to the first side and a release liner releasably attached to the second side, the plastic film layer having a thickness comprising from about 1/4 to about 1/3 of the overall thickness of the membrane .

26. The membrane of claim 25 wherein the rubberized asphalt is rubber-modified bitumen.

27. The membrane of claim 25 wherein the rubberized asphalt comprises from about 5 to about 20 weight percent rubber.

28. The membrane of claim 25 wherein the rubberized asphalt comprises from about 10 to about 15 weight percent rubber.

29. The membrane of claim 25 wherein the rubberized asphalt comprises a block copolymer.

30. The membrane of claim 29 wherein the block copolymer is a styrene-butadiene-styrene block copolymer.

31. The membrane of claim 29 wherein the block copolymer is a styrene-isoprene-styrene block copolymer.

32. The membrane of claim 25 wherein the release liner has a thickness ranging up to about 4 mils.

33. The membrane of claim 25 wherein the plastic film layer comprises polyethylene.

34. The membrane of claim 25 wherein the plastic film layer comprises polypropylene.

35. The membrane of claim 33 wherein the polyethylene is high density polyethylene.

36. The membrane of claim 35 in combination with a drainage product attached to the high density polyethylene layer.

37. The membrane of claim 36 wherein the drainage product is bonded to the high density polyethylene layer.

38. The membrane of claim 37 wherein the drainage mat and high density polyethylene layer are bonded with an adhesive.

39. The membrane of claim 25, having an overall thickness ranging from about 30 to about 150 mils.

40. The membrane of claim 39, having an overall thickness ranging from about 65 to about 95 mils.

41. The membrane of claim 25 wherein the release liner comprises a polymeric film.

42. The membrane of claim 25 wherein the release liner comprises paper.

43. The membrane of claim 25 wherein the release liner is pre-coated with a release agent.

44. A method for reducing crack formation and propagation in concrete slabs and walls, comprising the steps of:

providing a composite membrane having a heavy plastic film layer on a first side, a geotextile layer on a second side, and a rubberized asphalt layer disposed between the two sides;

applying the composite membrane to a substrate with a durable plastic film layer facing and contacting the substrate; and thereafter

pouring concrete against the geotextile layer to bond the composite membrane to the concrete.

45. The method of claim 44 wherein the substrate is cleaned with alcohol prior to applying the composite membrane.

46. The method of claim 45 wherein the composite membrane is applied to the substrate with an adhesive.

47. The method of claim 44 wherein the composite membrane is applied to the substrate using fastener devices.

48. The method of claims 44 wherein the composite membrane further comprises edge portions that do not have a geotextile layer and wherein at least one such edge portion is overlapped with an edge portion of an adjacent composite membrane.

49. The method of claim 48 wherein the overlap is sealed with a liquid adhesive.

50. The method of claim 49 wherein the overlap is sealed with fabric tape.

51. The method of claim 40 wherein the overlap is compressed with a pressure roller.

52. The method of claim 44 wherein the substrate is vertical.
53. The method of claim 44 wherein the substrate is horizontal.
54. The method of claim 44 wherein the substrate is inclined.
55. The method of claim 44 wherein the composite membrane has a thickness ranging from about 30 mils to about 150 mils.
56. The method of claim 55 wherein the composite membrane has a thickness ranging from about 65 to about 95 mils.
58. The method of claim 44 wherein the plastic film layer comprises polyethylene.
59. The method of claim 58 wherein the plastic film layer comprises high density polyethylene.
60. The method of claim 44 wherein the plastic film layer has a thickness of about 20 mils.
61. The method of claim 44 wherein the rubberized asphalt comprises from about 5 to about 20 weight percent rubber.
62. The method of claim 61 wherein the rubberized asphalt comprises from about 10 to about 15 weight percent rubber.
63. The method of claim 44 wherein the rubberized asphalt is modified with a block copolymer.

64. The method of claim 63 wherein the block copolymer is styrene-butadiene-styrene.

65. The method of claim 63 wherein the block copolymer is styrene-isoprene-styrene.

66. The method of claim 44 wherein the geotextile is nonwoven.

67. The method of claim 44 comprising the additional step of placing a drainage board against the substrate prior to applying the composite membrane.

68. The method of claim 44 wherein the composite membrane is applied in an underslab installation.

69. The method of claim 44 wherein the composite membrane is applied in a blindside installation.

70. A method for reducing crack formation and propagation in concrete slabs and walls, comprising the steps of:

providing a composite membrane having an overall thickness and comprising a layer of rubberized asphalt having first and second sides with a flexible layer of durable plastic film continuously bonded to the first side and a release liner releasably attached to the second side; the plastic film layer having a thickness ranging from about 1/4 to about 1/3 of the overall thickness of the membrane;

applying the composite membrane to a substrate consisting of a concrete slab or wall, with the rubberized asphalt layer contacting the substrate; and thereafter

applying a drainage product to the durable plastic film layer.

71. The method of claim 70 wherein the substrate is horizontal.

72. The method of claim 71 wherein the substrate is vertical.

73. The method of claim 70 wherein the composite membrane has a thickness ranging from about 30 mils to about 150 mils.

74. The method of claim 73 wherein the composite membrane has a thickness ranging from about 65 to about 95 mils.

75. The method of claim 70 wherein the plastic film layer comprises polyethylene.

76. The method of claim 70 wherein the plastic film layer comprises high density polyethylene.

77. The method of claim 70 wherein the release liner has a thickness ranging up to about 4 mils.

78. The method of claim 70 wherein the rubberized asphalt comprises from about 5 to about 20 weight percent rubber.

79. The method of claim 78 wherein the rubberized asphalt comprises from about 10 to about 15 weight percent rubber.

80. The method of claim 70 wherein the rubberized asphalt is modified with a block copolymer.

81. The method of claim 80 wherein the block copolymer is styrene-butadiene-styrene.

82. The method of claim 80 wherein the block copolymer is styrene-isoprene-styrene.

83. The method of claim 70 wherein the composite membrane is applied in a blindside installation.

84. The method of claim 70 wherein the composite membrane is applied in a foundation wall application.